

KNOTS

Once there was a form of material writing, a three-dimensional way of encoding textual and numeric information. It was called *quipus*, a word meaning “knots” in the Quechua language.

Having a lifespan of over a thousand years among the Andes Mountains of South America, this notation system is a rarity in human history because of its spatial qualities. Instead of engraving clay surfaces, like the Sumerians, or applying ink on paper, like the Chinese, the Andean peoples knotted ropes.

3. Inherited from previous cultures in the region, the Inca Empire made quipus its official system for accounting, calendric, and historical records. By means of quipus the Incas stored precise data gathered on each community and each individual inhabiting the vast empire. The Spaniards could not have hoped for a better record regarding the peoples and resources available in their newly conquered territories. Nevertheless, because no Spaniard ever learned the quipu code they depended on the local experts, at least until 1583 when quipus were officially banned.

The reckless Catholic campaigns of *The Extirpation of Idolatries* carried out the eradication of quipus. Knotted records were the first target of vicar Francisco de Ávila who led the campaigns under the command of being “mindful to burn all the quipus in every town”. This kind of systematic destruction belongs to a long-standing tradition; the same devoted Christians who had set fire to classical Greek art and literature implemented the Inquisition centuries after. Thus, when their ships arrived on American shores they were well-trained for the cleansing job. The extirpations extended all the way from Mesoamerica to the last corner of the Andes.

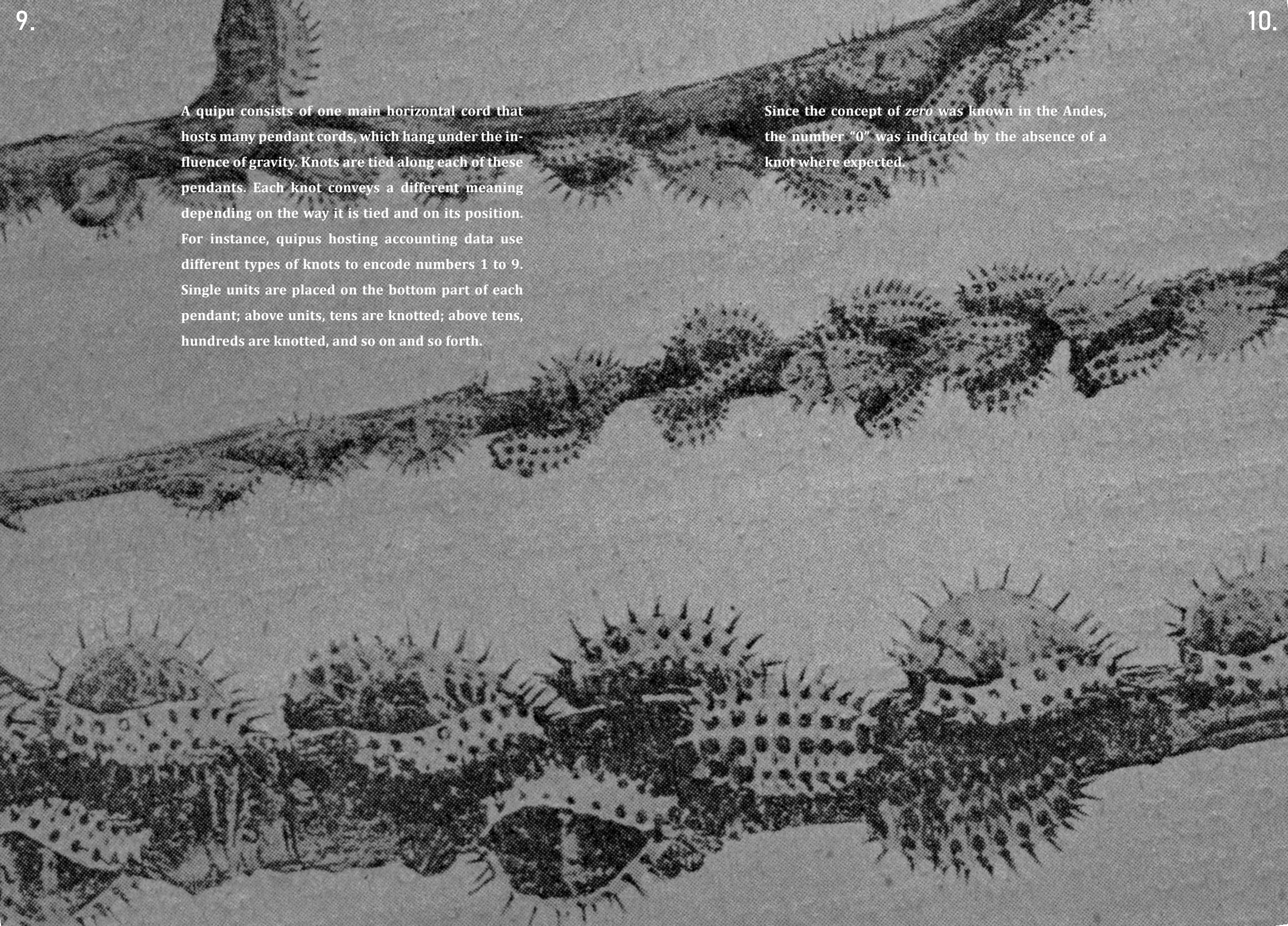
The history of *knowledge burning* is profuse. The Spaniards were not the first to destroy quipus; just before their conquering army walked over Andean grasslands, a fiery civil war had taken place between two Inca brothers who were battling to seize the throne of their dead father. The victorious Atahualpa then sent his emissaries to destroy all quipus that told stories of his defeated brother.

In reality, cosmologies cannot be erased by brute force, at most they are pervasively sunk somewhere deep inside people. Out of view but not out of existence. Every empire rules by building new realities upon repressed memories.

Censorship is no longer executed by pouring gasoline over piles of books, nowadays the burning happens inside the *user*. Even the very concept of censorship is becoming outdated, the aim of the current power structures is to hack the cognition of the individuals: to manipulate from the inside rather than to suppress from the outside. Book burning has been replaced by behavior manipulation.

In fear that quipus could enable the resistance of the indigenous populations, in 1583 the Catholic clergy labelled them as heretic objects and proceeded with the plan: search and destroy.



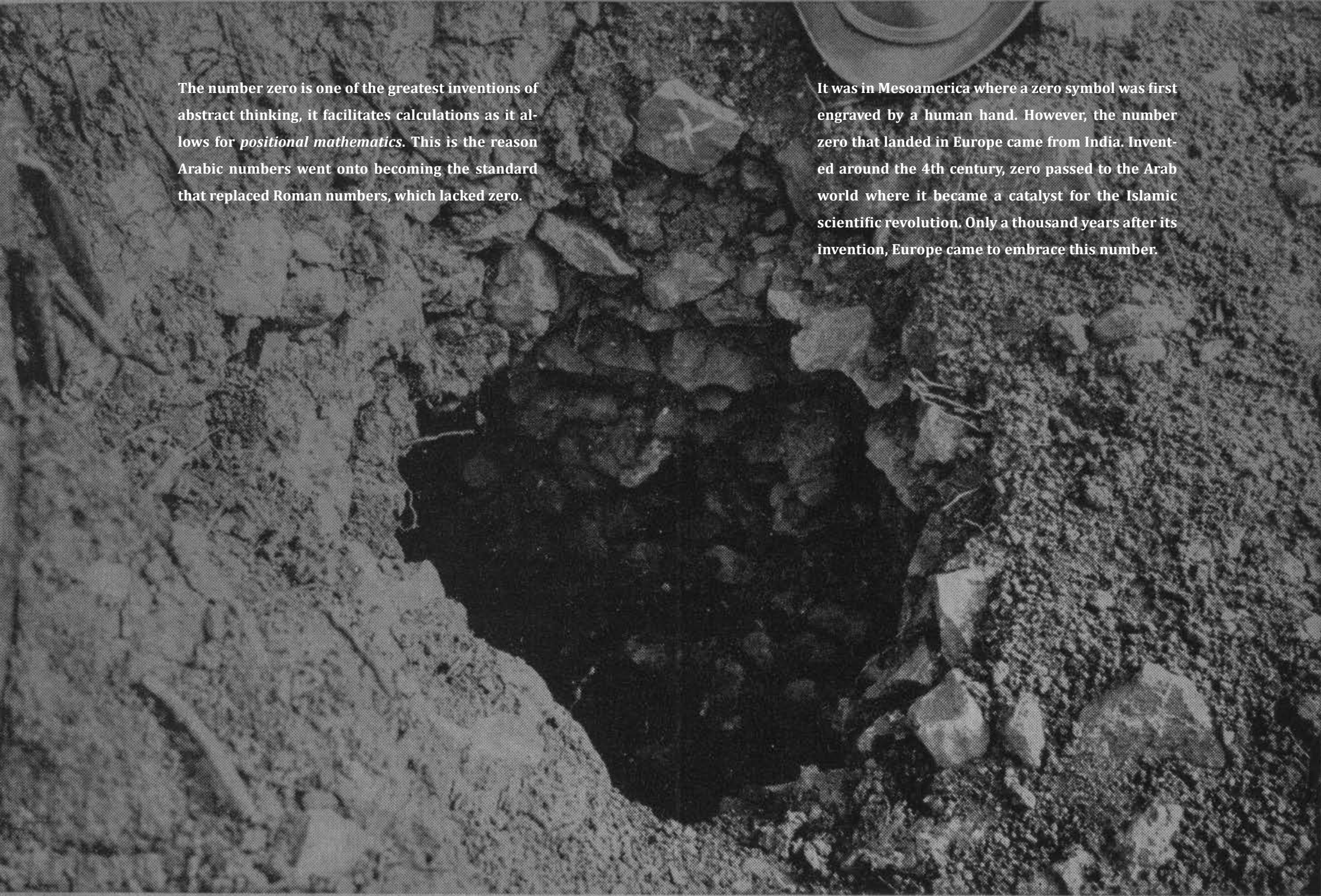


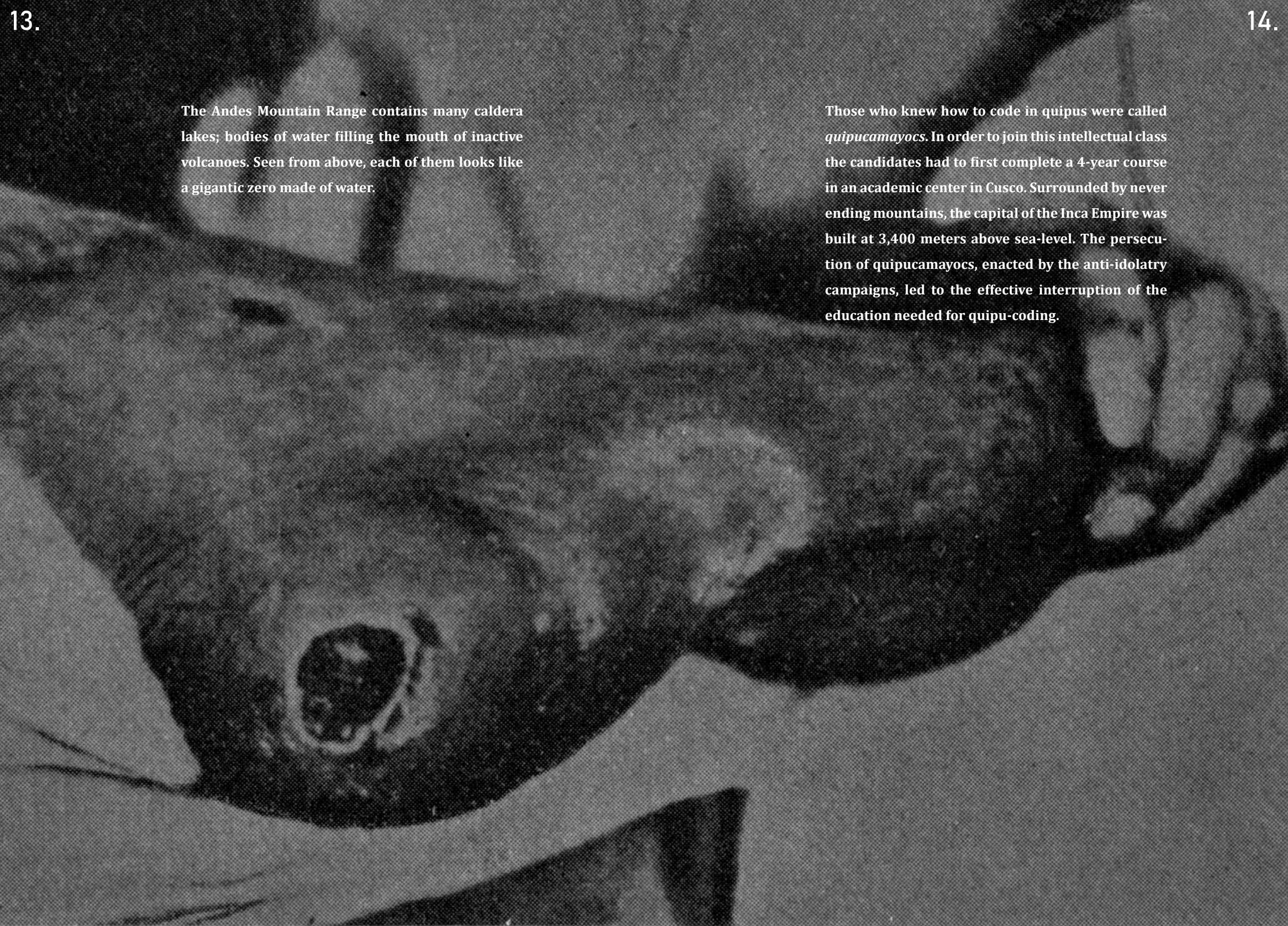
A quipu consists of one main horizontal cord that hosts many pendant cords, which hang under the influence of gravity. Knots are tied along each of these pendants. Each knot conveys a different meaning depending on the way it is tied and on its position. For instance, quipus hosting accounting data use different types of knots to encode numbers 1 to 9. Single units are placed on the bottom part of each pendant; above units, tens are knotted; above tens, hundreds are knotted, and so on and so forth.

Since the concept of zero was known in the Andes, the number "0" was indicated by the absence of a knot where expected.

The number zero is one of the greatest inventions of abstract thinking, it facilitates calculations as it allows for *positional mathematics*. This is the reason Arabic numbers went onto becoming the standard that replaced Roman numbers, which lacked zero.

It was in Mesoamerica where a zero symbol was first engraved by a human hand. However, the number zero that landed in Europe came from India. Invented around the 4th century, zero passed to the Arab world where it became a catalyst for the Islamic scientific revolution. Only a thousand years after its invention, Europe came to embrace this number.





The Andes Mountain Range contains many caldera lakes; bodies of water filling the mouth of inactive volcanoes. Seen from above, each of them looks like a gigantic zero made of water.

Those who knew how to code in quipus were called *quipucamayocs*. In order to join this intellectual class the candidates had to first complete a 4-year course in an academic center in Cusco. Surrounded by never ending mountains, the capital of the Inca Empire was built at 3,400 meters above sea-level. The persecution of *quipucamayocs*, enacted by the anti-idolatry campaigns, led to the effective interruption of the education needed for quipu-coding.



In the following centuries it was widely believed that quipu-encryption had become extinct, however the code survived among small communities on the margins of colonial control.

As quipu literacy dropped among Andean communities, this notation system eventually vanished though slower than reported in colonial chronicles. Hearsay suggests that the last quipucamayoc died early in the 20th century. No academic or historian ever met them.

The colonial chronicles from the mid-16th century onwards differ in their renderings of the attributes of the quipu system. However, they all agree about its accounting and record-keeping capabilities.

Some of these chroniclers noticed additional characteristics of quipus, most striking is that the knots would have been used as a *memory tool*. Devices for recalling information date back to ancient times, perhaps the most well-known is a Greek method called the *Memory Palace*. This method consists of imagining a palace in which each room contains the sequential pieces of a memory. By knowing where the pieces are placed, one can mentally walk into the palace and retrieve each of the pieces to reconstruct the memory. According to those colonial chronicles, a quipu would have had a similar function as that of a memory palace, in this Andean version the knots are the imaginary rooms.